INCH-POUND

MIL-PRF-1/1609C
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SUPERSEDING
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26 July 1999

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, VOLTAGE REGULATOR
TYPE 8515

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the electron tube described herein shall consist of this document and the latest issue of MIL-PRF-1.

DESCRIPTION: Corona discharge.

See figure 1.

Mounting position: Any.

Weight: 0.5 ounce nominal.

ABSOLUTE RATINGS:

Parameter:	Ez	Eb	Ib	TA
Unit:	V dc	V dc	µA dc	°C
Maximum:	1,760	1,645	800	+85
Minimum:	---	1,550	20	-55
Test conditions:	---	---	100	---

See footnotes at end of table I.

GENERAL:

First article testing: Required. 7/

Holding period (MIL-STD-1311) t = 7 days.

TABLE I. Testing and inspection.

Inspection	Method MIL-STD-1311	Conditions	Acceptance Level 8/	Symbol	Limits Min	Limits Max	Unit
Conformance inspection, part 1							
Short and discontinuity detection	1201		0.4	---	---	---	---
Holding period end points:	---	6/					
Ionization voltage	3347		0.65	Ez	---	1,760	V dc
Change in voltage drop	---			ΔEb(1)	---	± 15	V dc
Regulation	3335			ΔEb	---	42	V dc
Peak current	---	5/		---	---	950	µA dc
Ionization voltage (total darkness)	3347	3/	0.65	Ez	---	1,760	V dc
Voltage drop	3337	Ebb/Ib = 100 ± 2.0 µA dc	0.65	Eb	1,560	1,640	V dc
Regulation	3335	Ib = 20 to 800 µA dc 4/	0.65	ΔEb	---	42	V dc
Peak current	---	5/	0.65	---	---	950	µA dc
Conformance inspection, part 2							
Vibration	1031	No voltages; t = 5 minutes; 55 to 500 Hz; 10 G (max) 1/	---	---	---	---	---
Leakage current	3305	Eb = 1,440 V dc (min); T = 25°C ± 5°C; relative humidity = 90 ± 5 percent	---	LIb	---	0.5	µA dc
Temperature range, operating	1026	T = -55°C ± 5°C;					
		Ionization voltage	---	Ez	---	1,760	V dc
		Voltage drop		Eb	1,550	1,642	V dc
		Regulation		ΔEb	---	42	V dc
Temperature range, operating	1026	T = +85°C ± 5°C;					
		Ionization voltage	---	Ez	---	1,760	V dc
		Voltage drop		Eb	1,558	1,645	V dc
		Regulation		ΔEb	---	47	V dc

See footnotes at end of table.

TABLE I. Testing and inspection - Continued.

Inspection	Method MIL-STD-1311	Conditions	Acceptance Level 8/	Symbol	Limits		Unit
					Min	Max	
Conformance inspection, part 3							
Life-test provisions	---	Group B; Ebb/Ib = 100 ± 2 µA dc; t = 1,000 hours	---	---	---	---	---
Life-test end points:	---						
Voltage drop	3337		---	Eb	1,550	1,645	V dc
Regulation	3335		---	ΔEb	---	47	V dc
Ionization voltage	3347		---	Ez	---	1,760	V dc
Periodic-check test							
Shock specified pulse	1042	Test condition C 2/	---	---	---	---	---

1/ Criterion for passing this test shall be compliance after test with the initial requirements for voltage drop and regulation.

2/ Electrical samples shall not be used for this test. Ten additional samples shall be submitted for shock test only. Criterion for passing this test shall be compliance after test of at least 80 percent of the tubes with the initial requirements of voltage drop and regulation.

3/ The tube under test shall not have been conducting for at least 30 minutes prior to test. During this test, the regulator tube shall not be exposed to external sources of radiation and shall be shielded from light. No conditioning current is permitted.

4/ Eb maximum shall not be exceeded anywhere within the regulated current range. In testing for regulation, current shall be varied continuously through the regulated range.

5/ Peak current is the current maximum during a transient pulse which will not cause damage to the tube or cause tube to go into glow.

6/ The holding period commences upon completion of the initial performance of the indicated tests. At the conclusion of the holding period, the indicated tests will be performed again. Of the tubes failing the holding-period end-point test, those which fail with respect to voltage drop only, may be retested after an additional 60-day period. ΔEb(1) is the change in voltage drop from beginning to end of holding period.

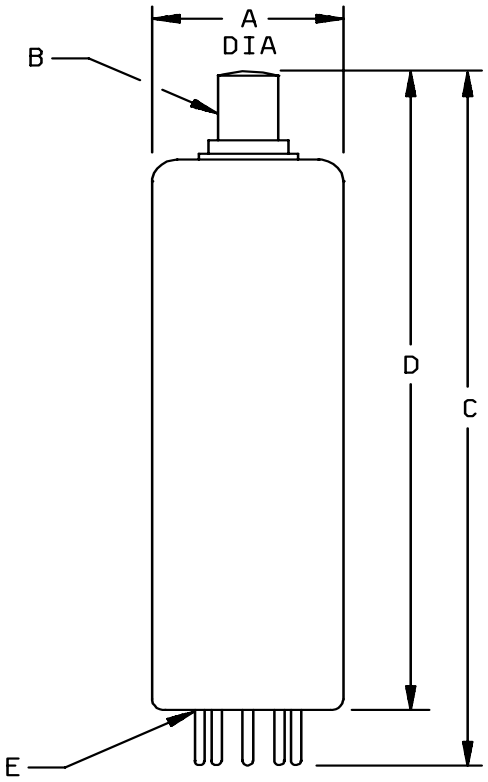
7/ First article testing requirements hereby replace any qualification requirements referable to the product covered herein. The term "First article testing" shall be considered as synonymous with the term "Preproduction sample approval testing." All tests applicable herein (including all first article tests and conformance inspection, parts 1, 2, and 3) shall be performed during first article testing. A failure of any one tube in any of the tests shall be cause for decision of first article sample disapproval. The contractor/manufacturer shall provide test reports and written assurance that:

(a) The first article sample is representative of the product to be submitted under the contract.

(b) First articles shall be manufactured from new materials and in the facility that produced the sample tubes.

A test plan shall be submitted to the contracting officer for approval prior to proceeding with first article testing. The test plan shall list all production test and laboratory test facilities to be utilized in first article testing and production phases of the contract. Upon receipt of approval of the test plan, first article testing may proceed. When testing has been completed, three copies of the test report shall be prepared(see MIL-HDBK-831 for guidance), certified by a government representative and submitted with the test samples to the contracting officer for approval.

8/ This specification sheet uses accept on zero defect sampling in accordance with MIL-PRF-1, table III.



Ltr	Dimensions			
	Inches		Millimeters	
	Min	Max	Min	Max
Conformance inspection, part 2				
A	---	.750	---	19.05
C	---	2.750	---	69.85
D	---	2.500	---	63.50
Reference dimensions				
B	Cap: C1-3 (EIA)			
E	Base: E7-1 (EIA)			

FIGURE 1. Outline drawing of electron tube type 8515.

NOTES

Referenced documents. In addition to MIL-PRF-1, this specification sheet sheet references MIL-STD-1311 and MIL-HDBK-831.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

Custodian:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5960-3751)

Review activities:
Navy - AS, CG, MC
Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.